J.R. Simplot Company
P.O. Box 912,
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208 235-5600 Business

October 9, 2020

Arthur Burbank
USDA Forest Service
4350 South Cliffs Dr.
Pocatello, ID 83204

Subject: Biological Selenium Removal Treatment Technology
Water Treatment Pilot Study
August 2020 Progress Report

Dear Art,

This progress report summarizes key activities in August 2020 associated with Phase 2 of the Water Treatment Pilot Study located near Hoopes Spring. This Pilot Study is being conducted as part of the Smoky Canyon Mine Remedial Investigation/Feasibility Study (RI/FS) to provide information on the effectiveness of the active biological treatment system in removing selenium and other COPCs from South Fork Sage Creek Springs and Hoopes Spring.

Work related to the approved Phase 2 Pilot Study continues at the site in accordance with the Final *Phase 2 Pilot Study Work Plan and Sampling and Analysis Plan, Ultra-Filtration/Reverse Osmosis and Biological Selenium Removal Fluidized Bed Bioreactor Treatment Technology* (Phase 2 WP/SAP).

Identification of Deliverables and Data Transmittals

There were no outstanding deliverables or transmittals for the month of August. At the time of this report, we have received laboratory data for Week 129 and Week 131. Preliminary laboratory data are presented in Table 1. The field data for the Week 129 and Week 131 sampling events is summarized in Table 2.

Completed Activities

The following activities associated with the Phase 2 Pilot Study were completed in August 2020:

- Continued system operation and treatment of selenium.

The Treatment System Pilot (TSP) influent total selenium concentration for Week 129 was 164 ug/L and 160 ug/L for Week 131. The Treatment System Pilot effluent total selenium concentration for Week 129 was 20.9 ug/L and 38.2 ug/L for Week 131. The average removal efficiency for August was approximately 83% for total selenium removal.

The average flow of the TSP for the month of August was 1,511 gpm. Since full scale operations began in early December 2017 approximately 2.173 billion gallons of impacted water has been treated. The mass of selenium removed from December 2017 through August2020 is approximately 2,345 pounds.

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Upcoming Activities

The following activities associated with the Phase 2 Pilot Study are planned through September 2020:

- Continue system monitoring in accordance with the sampling and analysis plan.
- The iron coprecipitation pilot is running well and preliminary indication are showing improved selenium removal.

Please contact me if there are questions regarding this monthly progress report.

Sincerely,

Jeffrey Hamilton
Environmental Engineer

cc:

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Table 1
Laboratory Results Focused Analyte List

		Week 129			Week 131		
Station >>		Influent	Ultra Filtration Backwash	Effluent	Influent	Ultra Filtration Backwash	Effluent
Sample ID >>		SC0820-LSSHS-IN001	SC0820-LSSHS-UFB001	SC0820-LSSHS-EF001	SC0820-LSSHS-IN002	SC0820-LSSHS-UFB002	SC0820-LSSHS-EF002
Date >>		8/5/2020			8/19/2020		
Analyte	**Units**						
General Chemistry							
Ammonia, as N	mg/L	0.026 U	0.0391	0.026 U	0.0366	0.026 U	0.026 U
Biochemical Oxygen Demand	mg/L	2 U	2 U	2 U	2 U	2 U	22
TSS	mg/L	2 U	2 U	2 U	2 U	2 U	2 U
Nutrients							
Nitrate, as N	mg/L	0.36	0.16	0.42	0.47	0.18	0.81
Sulfide	mg/L	1 U	1 U	1 U	1 U	1 U	1 U
Phosphorus, Total	mg/L	0.0181	0.0151	0.0709	0.0134	0.00585 J	0.212
Metals and Metalloids							
Selenium, Dissolved	mg/L	0.174	0.0376	0.0195	0.167	0.0307	0.0389
Selenium, Total	mg/L	0.164	0.0364	0.0209	0.16	0.03	0.0382

Notes

Results presented are preliminary, and have not been validated at the time of this report.

U - Analyte not detected above the method detection limit (MDL).

J - Result is estimated.

Table 2
Field Water Quality Data

Hoopes Springs Water Treatment Plant Pilot Study
Phase 2, Performance Monitoring

		Parameter >>	Dissolved Oxygen	ORP	pH	SC	Temperature	Turbidity
		Units >>	mg/L	mV	SU	umhos/cm	C	NTU
Station	**Sample ID**	**Date**						
Week 129								
Influent	SC0820-LSSHS-IN001	8/5/2020	7.6	112	7.24	435	14.83	0.12
Ultra Filtration Backwash	SC0820-LSSHS-UFB001	8/5/2020	10.83	106	7.11	88	13.48	1
Effluent	SC0820-LSSHS-EF001	8/5/2020	10.33	89	7.81	453	13.23	0.1
Week 131								
Influent	SC0820-LSSHS-IN002	8/19/2020	11.3	14.6	8.12	330	11.72	--
Ultra Filtration Backwash	SC0820-LSSHS-UFB002	8/19/2020	8.27	48.5	8.31	141	12.01	--
Effluent	SC0820-LSSHS-EF002	8/19/2020	8.11	37.8	8.06	565	12.12	--

Notes:
-- = Not measured